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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,686	11/13/2003	Tin-Tack Peter Cheung	33735US (4081-04300)	9092

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EXAMINER	
DANG, THUAN D	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/712,686	CHEUNG ET AL.	
	Examiner	Art Unit	
	Thuan D. Dang	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 13-49* is/are pending in the application.

4a) Of the above claim(s) *42-49* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 13-41* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/17/04; 5/2/05; 2/11/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I (claims 1-41) in the reply filed on 2/10/2006 is acknowledged. The traversal is on the ground(s) that no undo burden will be placed on the office by examining all groups of claims together. This is not found persuasive because regardless of whether or not applicant(s) believe no undo burden would exist if all groups are examined together, applicant(s) have not shown that the alternative use/making for the process/product proposed by the examiner is not feasible. Therefore, applicant(s) have not shown that the groups are not distinct.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Claim 4 is objected to because of the following informalities: the compound "N-methylpyrrolidone" is recited on both lines 2 and 4 of claim 4. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10 and 14-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosyns et al (4,571,442).

Cosyns discloses a process in which acetylene is selectively hydrogenated in the presence of a catalyst palladium and a second metal such as silver and gold by passing a mixture of acetylene and ethylene with a hydrocarbon liquid phase which comprise an aromatic hydrocarbon and an amine such as morpholine and pyridine (the abstract; col. 2, lines 7-59).

The difference between the Cosyns process and the presently claimed process is that while applicants claim specifically using silver, Cosyns does not specifically select silver from between gold and silver (see entire patent, namely examples). However, one skilled in the art

would select silver alone or silver and gold as the second metal(s) since it is expected that using silver or gold would yield similar result.

Cosyns does not disclose removing olefin from the solvent so that only acetylene is passed to the selective hydrogenation (see entire patent). However, it would have been obvious to one having oridinary skill in the art at the time the invention was made to have modified the Cosyns et al process by removing these olefins since only acetylene participate in the hydrogenation.

While applicants claim using a solvent, namely n-formyl morpholine or N,N-dimethylformamide. Cosyns disclose using a general morpholine or dimethylformamide (col. 2, line 44, tables 1 and 2).

It would have been obvious to one having oridinary skill in the art at the time the invention was made to have modified the Cosyns process by using n-formyl morpholine or N,N-dimethylformamide since it is expected that using any morpholine or dimethylformamide as the amine solvent would yield similar results.

Cosyns appears not to disclose the concentration of solvent and the acetylene. However, the concentration is a parameter which must be selected to optimize the process since it has been held by the patent law that the selection of reaction parameters such as temperature and concentration would have been obvious. More particularly, where the general conditions of the claimed are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller* 105 USPQ 233, 255 (CCPA 1955). *In re Waite* 77 USPQ 586 (CCPA 1948). *In re Scherl* 70 USPQ 204 (CCPA 1946). *In re Irmscher* 66 USPQ 314

(CCPA 1945). *In re Norman* 66 USPQ 308 (CCPA 1945). *In re Swenson* 56 USPQ 372 (CCPA 1942). *In re Sola* 25 USPQ 433 (CCPA 1935). *In re Dreyfus* 24 USPQ 52 (CCPA 1934).

The feed of Cosyns is from cracking (col. 1, lines 6-10).

Cosyns does not disclose the olefin stream comprises propylene. However, it would have been obvious to one having oridinary skill in the art at the time the invention was made to have modified the Cosyns process by using a propylene feed since ethylene and propylene are very close homologs which are expected to have similar characteristics since it has been established that closely relate homologs, analogs and isomers in chemistry may create a prima facie case of obviousness. *In re Dillon* 16 USPQ 2d 1897, 1904 (Fed. Cir. 1990); *In re Payne* 203 USPQ 245 (CCPA 1979); *In re Mills* 126 USPQ 513 (CCPA 1960); *In re Henze* 85 USPQ 261 (CCPA 1950); *In re Haas* 60 USPQ 544 (CCPA 1944).

While Cosyns discloses that pyridine can be used as the solvent, applicants claim using pyridine as a boiling additive. Therefore, it would have been obvious to one having oridinary skill in the art at the time the invention was made to have modified the Cosyns process by using both pyridine and morpholine to arrive at the applicants' claimed process since it is expected that using both of these compounds would yield similar results.

Cosyns appears not to disclose the concentration of components in the reaction such as solvent, hydrogen, and the unsaturated. However, the concentration is a parameter which must be selected to optimize the process since it has been held by the patent law that the selection of reaction parameters such as temperature and concentration would have been obvious. More particularly, where the general conditions of the claimed are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*

105 USPQ 233, 255 (CCPA 1955). *In re Waite* 77 USPQ 586 (CCPA 1948). *In re Scherl* 70 USPQ 204 (CCPA 1946). *In re Irmscher* 66 USPQ 314 (CCPA 1945). *In re Norman* 66 USPQ 308 (CCPA 1945). *In re Swenson* 56 USPQ 372 (CCPA 1942). *In re Sola* 25 USPQ 433 (CCPA 1935). *In re Dreyfus* 24 USPQ 52 (CCPA 1934).

Cosyns does not disclose desorbing the monoolefin from the polar solvent so that the olefin can be recovered and the polar solvent can be recycled. However, it would have been obvious to one having oridinary skill in the art at the time the invention was made to have modified the Cosyns process by recovering these components as the desired product or as recycle(s) to optimize the cost of material.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cosyns et al (4,571,442) in view of Kimble et al (6,127,588).

Cosyns discloses a process as discussed above.

Cosyns does not disclose the catalyst also containing fluoride. However, Kimble discloses a selective hydrogenation catalyst containing fluoride (the abstract; col. 2, line 54).

It would have been obvious to one having oridinary skill in the art at the time the invention was made to have modified the Cosyns process by either adding fluoride to the Cosyns catalyst or using the Kimble catalyst as the selective hydrogenation catalyst since the catalyst has an increased of enhanced selectivity of the desired product, an decreased production of green oil, thereby increasing the cycle life of the catalyst.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang
Primary Examiner
Art Unit 1764

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